## PATENT APPLICATION

## IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re the Application of

Bijan S. KHIRABADI, Ying C. SONG and Kelvin G.M. Former Group Art Unit: 1651

**BROCKBANK** 

Application No.: Rule 53(b) Divisional of U.S.

Former Examiner: S. Saucier

Application No. 09/691,197, filed October 19, 2000

Filed: August 25, 2003 Docket No.: 102691.02

METHOD OF CRYOPRESERVATION OF BLOOD VESSELS BY VITRIFICATION For:

## INFORMATION DISCLOSURE STATEMENT

Commissioner for Patents P.O. Box 1450 Alexandria, VA 22313-1450

Sir:

Pursuant to 37 CFR §1.56, the attention of the Patent and Trademark Office is hereby directed to the reference(s) listed on the attached PTO-1449. Unless otherwise indicated herein, one copy of each reference is attached. It is respectfully requested that the information be expressly considered during the prosecution of this application, and that the reference(s) be made of record therein and appear among the "References Cited" on any patent to issue therefrom.

- 冈 1. This Information Disclosure Statement is being filed (a) within three months of the U.S. filing date of this non-CPA application, OR (b) before the mailing date of a first Office Action on the merits in the present application. No certification or fee is required.
- $\boxtimes$ 2. The references were cited by or submitted to the Office in parent applications Nos. 09/691,197, filed October 19, 2000, and/or 09/289,777, filed April 13, 1999, which are relied upon for an earlier filing date under 35 U.S.C. §120. Thus, copies of these references are not attached. 37 CFR §1.98(d).

William P. Berridge

Registration

Melanie L. Mealy Registration No. 40,085

WPB:MLM/jam

Date: August 25, 2003

OLIFF & BERRIDGE, PLC P.O. Box 19928 Alexandria, Virginia 22320 Telephone: (703) 836-6400

DEPOSIT ACCOUNT USE **AUTHORIZATION** Please grant any extension necessary for entry; Charge any fee due to our Deposit Account No. 15-0461

(REV. 8-83)				ATTY DOCKET NO.  102691.02  APPLICATION NO. Rule 53(b) Divisional of 09/691,197, filed October 19,							
INFORMATION DISCLOSURE STATEMENT					2000						
(Use several sheets if necessary)					ANT(S) KHIRABADI, Ying C. SONG and	Kelvin G.I	M. BROCKB	ANK			
				FILING I August 2:		FORMER GROUP 1651					
		U.S.	PAT	ENT DOCL	IMENTS						
EXAMINER INITIAL		DOCUMENT NUMBER		DATE	NAME		CLASS	SUB CLASS			
-		5,145,769	8/9	2	McNally et al.						
		5,149,621	9//9	92	McNally et al.						
		5,158,867	10/	92	McNally et al.						
-		4,559,298	12/	1985	Fahy			-			
		4,494,385	01/	85	Kuraoka et al.						
-		5,122,110	06/	1992	McNally et al.						
		5,217,860	06/	1993	Fahy et al.						
		5,472,876 12/1		1995	Fahy						
		5,518,878 05/1		1996	Wilkins et al.						
FOREIGN P					ATENT DOCUMENTS						
		DOCUMENT NUMBER		DATE	COUNTRY	CLASS	SUB CLASS				
				<del></del>							
OTHER DOCUMENTS (Including Author, Title, Date, Pertinent Pages, etc.)											
		Armitage, "Survival of Corneal Endothelium following Exposure to a Vitrification Solution," CRYOBIOLOGY, Vol. 26, 1989, pp. 318-327.									
		Bourne et al., "Human Corneal Studies with a Vitrification Solution Containing Dimethyl Sulfoxide, Formamide, and 1,2-Propanediol," CRYOBIOLOGY, Vol. 31, No. 6, 1994, pp. 522-530.  Dent et al., "Cryopreservation of Vein Grafts," SURGICAL FORUM, Vol. 25, pp. 241-243, 1974.  Brockbank et al., "Cryopreserved Vein Transplantation," Journal of Cardiac Surgery, Vol. 7, No. 2, pp. 170-176, 1992.									
		Müller-Schweinitzer, "Cryopreservation: a useful technique for storing tissues for pharmacological investigations," Trends in Pharmacological Sciences; Vol. 9, No. 6, pp. 221-223; June 1988.									
	1	Weber et al., "Viable Vein Graft Preso	ervati	on," Journa	l of Surgical Research 18, pp. 247	-255, 197	75.				
		Bishop et al., "A morphological assess Journal of Cardiovascular Surgery 28,				ised for a	rterial replace	ement,"			
		Barner et al., "Fresh and Frozen Home	ologo	us Venous	Grafts for Arterial Repair," Angio	logy 17, p	p. 389-401, 1	1966.			
EXAMINER	1				DATE	CONSIL	DERED				
Examiner:	Examiner: Initial if citation considered, whether or not citation is in conformance with M.P.E.P. 609; draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.										

Sheet 2 of	f 4
------------	-----

Form PTO-1449 US Dept. of Commerce (REV. 8-83) PATENT & TRADEMARK OFFICE INFORMATION DISCLOSURE STATEMENT			ATTY DOCKET NO. 102691.02			APPLICATION NO. Rule 53(b) Divisional of 09/691,197, filed October 19, 2000			
(Use several sheets if necessary)			APPLICANT(S)						
,				HIRABADI, Ying C. SONG and I	Kelvin G.N	и. BROCKB	ANK		
				FILING DATE August 25, 2003			FORMER GROUP		
		U.S.	PATE	ENT DOCU	MENTS				
EXAMINER INITIAL		DOCUMENT NUMBER	1	DATE	NAME		CLASS	SUB CLASS	
	5	5,723,282	03/	1998	Fahy et al.				
	5	,821,045	10/1	1998	Fahy et al.				
	5	5,856,081	01/	1999	Fahy				
	5	5,962,214	10/	1999	Fahy et al.	_			
	6	5,194,137	02/2	2001	Khirabadi et al.				
		FOREIG	N PA	TENT DO	CUMENTS		-		
		DOCUMENT NUMBER	I	DATE	COUNTRY		CLASS	SUB CLASS	
	v	WO 96/05727	02/2	29/96	WIPO				
	v	WO 00/60935	10/0	09/00	WIPO				
	WO 01/78504 1		10/2	25/01	WIPO				
OTHER DOCUMENTS (Includi				ng Author, T	Title, Date, Pertinent Pages, etc.)				
	Sitzmann et al., "Dimethylsulfoxide-treated, cryopreserved venous allografts in the arterial and venous systems," Surger Vol. 95, No. 2, pp. 154-159, 1984.								
		Song et al., "Cryopreservation of the Common Carotid Artery of the Rabbit: Optimization of Dimethyl Sulfoxide Concentration and Cooling Rate," Cryobiology 32, pp. 405-421, 1995.							
		Wusteman et al., "The Effect of Cooling Rate and Temperature on the Toxicity of Ethylene Glycol in the Rabbit Internal Carotid Artery," Cryobiology 33, pp. 423-429, 1996.							
		Narayanan et al., "Successful Cryopreservation of Microvenous Allografts," Journal of Investigative Surgery, Vol. 5, pp. 155-160, 1992.							
		Ku et al., "Human Coronary Vascular Smooth Muscle and Endothelium-Dependent Responses after Storage at -75°C," Cryobiology 29, pp. 199-209, 1992.							
		Müller-Schweinitzer et al., "Sucrose promotes the functional activity of blood vessels after cryopreservation in DMSO-containing fetal calf serum," Naunyn-Schmiedeberg's Archives of Pharmacology, pp. 1-4, 1992.							
		Müller-Schweinitzer et al., "Functiona 196°C in a serum-free medium," Journ					ryopreservat	ion at -	
EXAMINER	·——-I—.				DATE	CONSID	ERED		
Examiner: In	nitial if cit	tation considered, whether or not ci	tation	n is in cont	formance with M.P.E.P. 609; dr next communication to applicant.	aw line th	rough citati	on if not in	

Sheet	3	of	4

Form PTO-1449 US Dept. of Commerce (REV. 8-83) PATENT & TRADEMARK OFFICE			ATTY DOCKET NO. 102691.02				APPLICATION NO. Rule 53(b) Divisional of 09/691,197, filed October 19,				
INFORMATION DISCLOSURE STATEMENT					2000						
(Use several sheets if necessary)				APPLICANT(S) Bijan S. KHIRABADI, Ying C. SONG and Kelvin G.M. BROCKBANK							
				FILING DATE FORMER GRO 1651					MER GROU	ΓP.	
		U.S. PA	ATE	NT DOCU	MENTS				_		
EXAMINER INITIAL		DOCUMENT NUMBER		DATE	NAME			CLASS	SUB CLASS		
		5,873,254	02/	1999	Arav						
		FOREIGN	I PA	TENT DO	CUMENTS	S			· · ·		
		DOCUMENT NUMBER	,	DATE COUNTRY					CLASS	SUB CLASS	
						- <u>-</u>					
		OTHER DOCUMENTS (Inclu	udinį	g Author,	Γitle, Date,	Pertinent Page	es, etc.)				
		Fahy et al., G. M., "Vitrification as an Approach to Cryopreservation," Cryobiology 21, pp. 407-426, 1984.									
		Chen et al., X. H., "Vitrification of Multicomponent Solutions by Cooling to Cryogenic Temperatures," Cryogenics Vol. 30 Sept. Supplement, pp. 541-545, 1990.									
		Fahy et al., G. M., "Some Emerging Principles Underlying the Physical Properties, Biological Actions, and Utility of Vitrification Solutions," Cryobiology 24, pp. 196-213, 1987.									
		Ren et al., H. S., "The Crystallization Kinetics and the Critical Cooling Rates for Vitrification of Cryoprotective Solutions," Cryogenics 1990, Vol. 30, September Supplement, pp. 536-540.									
		Guttman et al., Frank M., "Variation of Cooling Rate and Concentration of Dimethyl Sulfoxide on Rabbit Kidney Function," Cryobiology, 23, pp. 495-499, 1986.									
		Jacobsen et al., I.A., "Effect of Cooling	gano	1 Warming	Rate on G	lycerolized Ra	bbit Kidney	s," Cry	obiology 19	:668, 1982.	
		F. Binette et al., "Expression of a Stable Articular Cartilage Phenotype Without Evidence of Hypertrophy by Adult Human Articular Chondrocytes In Vitro", Journal of Orthopaedic Research, Vol. 16, pp. 207-216, 1998.									
		Y. Song et al., "Vitreous Cryopreserval pp. 296-299, 2000.	tion	Maintains	the Functio	on of Vascular	Grafts", Na	ture Bi	otechnology	, Vol. 18,	
EXAMINER	1						DATE C	ONSID	ERED	<del></del>	
		citation considered, whether or not cita						line th	rough citati	ion if not in	
L	onionnai	nce and not considered. Include copy of	uns	tomi with	next comm	unication to ap	opiicant.				

Sheet 4 of 4	Sheet	4	of	4
--------------	-------	---	----	---

Form PTO-1449 US Dept. of Commerce (REV. 8-83) PATENT & TRADEMARK OFFICE INFORMATION DISCLOSURE STATEMENT			ATTY DOCKET NO. 102691.02  APPLICATION NO. Rule 53(b) Divisional of 09/691,197, filed October 19, 2000									
(Use several sheets if necessary)				APPLICANT(S) Bijan S. KHIRABADI, Ying C. SONG and Kelvin G.M. BROCKBANK								
				FILING DATE August 25, 2003				FORMER GROUP 1651				
		U.S. PAT	ΓEN'	r docu	MENTS							
EXAMINER INITIAL		DOCUMENT NUMBER	D	DATE NAME			E	CLASS		SUB CLASS		
	ļ			·		<del></del>						
<u> </u>												
	<u> </u>											
		FOREIGN P	PATI	ENT DO	CUMENTS							
		DOCUMENT NUMBER	D	ATE		COUNT	RY		CLASS	SUB CLASS		
					,,,,,							
							,					
		OTHER DOCUMENTS (Include	ing A	Author, 7	Title, Date, Pert	inent Page	s, etc.)		<u> </u>			
		T. Fujita, MD, PhD, et al., "Successful Ph Rehabilitation, Vol. 21, No. 4, pp. 304-30			f Human Skin t	y Vitrifica	ation", Journ	nal of E	Burn Care &			
	B. Stone et al., "Cryopreservation of Human Articular Cartilage for Autologous Chondrocyte Implantation", Cryobiolog (Abstracts, 35th Annual Meeting), Vol. 37, No. 4, pp. 445-446, 1998.								Cryobiology,			
	Abstracts, 36 <sup>th</sup> Annual Meeting of the Society for Cryobiology, "Vitrification of the Rabbit Cornea", Cryobiology, Vol 38, pp. 310, 1999.								ogy, Vol.			
	D.E. PEGG et al., "Fractures in Cryopreserved Elastic Arteries," Abstract Only, Database Accession No. PREV199799558143, Cryobiology, Vol. 34, No. 2, pp. 183-192, 1997.											
			<u>,</u>				·					
EXAMINER				-			DATE CO	DNSID	ERED			
Examiner:		citation considered, whether or not citation						line th	rough citati	on if not in		